BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS.	DOCKET NO. W-01445A-00-0962 **NOTICE OF FILING**

Staff of the Arizona Corporation Commission Utilities Division ("Staff") herein provides the Surrebuttal Testimony of Staff Witnesses Crystal S. Brown, Joel M. Reiker and Marlin Scott, Jr.

RESPECTFULLY SUBMITTED this 21st day of August, 2001.

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SURREBUTTAL

TESTIMONY

OF

CRYSTAL S. BROWN
JOEL M. REIKER
MARLIN SCOTT, JR.

DOCKET NO. W-01445A-00-0962

August 21, 2001

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SURREBUTTAL

TESTIMONY

OF

CRYSTAL S. BROWN

SENIOR RATE ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

AUGUST 21, 2001

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EXECUTIVE SUMMARY
ARIZONA WATER COMPANY
DOCKET NO. W-01445A-00-0962

The surrebuttal testimony of Ms. Crystal Brown responds to Arizona Water Company's rebuttal on the following issues:

1. Rate Base
    a. Post-Test Year Plant
    b. Accumulated Depreciation
    c. Construction Work In Progress
    d. Working Capital Allowance

2. Operating Income
    a. Property Tax Expense
    b. Income Tax Expense
    c. Construction Water Revenue
    d. Rate Case Expense
    e. Depreciation Expense

3. Rate Design

4. Accounting Order Regarding Arsenic

Ms. Brown's position on each of the adjustments and issues remains unchanged from her direct testimony with the exception of a revision to reflect the system level composite property tax rates in Ms. Brown's property tax calculation and removal of post-Test Year plant in the Overgaard system.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Crystal S. Brown. I am a Senior Rate Analyst employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Division"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Are you the same Crystal S. Brown who filed direct testimony in this case?

A. Yes, I am.

Q. What is the purpose of your surrebuttal testimony in this proceeding?

A. The purpose of my surrebuttal testimony in this proceeding is to respond, on behalf of the Division Staff ("Staff"), to the rebuttal testimony of various Arizona Water Company ("Arizona Water", "AWC", or "Company") witnesses in the areas of rate base, operating income, revenue requirement and rate design. Staff witness Marlin Scott, Jr. will address issues concerning water quality testing and the monitoring assistance program. Staff witness Joel Reiker will address issues concerning the cost of capital.

Q. Did you attempt to address every issue raised by the Company in its rebuttal testimony?

A. No. I limited my discussion to certain issues as outlined below. My silence on any particular issue raised in the Company's rebuttal testimony does not indicate that I agree with the Company's stated rebuttal position on the issue.

Q. What issues will you address?

A. I will address the issues listed below that are discussed in the rebuttal testimonies of AWC witnesses William Garfield, Ralph Kennedy, and Michael Whitehead:

. . .

1. Rate Base
    a. Post-Test Year Plant
    b. Accumulated Depreciation
    c. Construction Work In Progress
    d. Working Capital Allowance

2. Operating Income
    a. Property Tax Expense
    b. Income Tax Expense
    c. Construction Water Revenue
    d. Rate Case Expense
    e. Depreciation Expense

5. Rate Design

6. Accounting Order Regarding Arsenic

RATE BASE

Post-Test Year Plant

Q. Please briefly describe the post-test year plant that the Company has requested to include in rate base for the Northern Group's five (5) systems and your recommendation concerning this request.

A. The Company requested to include all revenue neutral plant placed in service on or before its cut-off date of March 31, 2001, in rate base. The Company's cut-off date is 15 months beyond the end of its chosen historical Test Year, December 31, 1999. In my direct testimony, I recommended a cut-off date of December 31, 2000. I recommended this cut-off date in order to have a reasonable amount of time to complete my audit and to have reasonable assurance that the utility plant allowed in rate base would not be significantly out of synchronization with Test Year revenues and expenses.

Q. Did Arizona Water raise concerns about your recommendation to use a December 31, 2000, cut-off date for plant in service?

A. Yes. Company witness, Mr. Ralph Kennedy, raised concerns about my recommendation in his rebuttal testimony. On Page 17, he is asked the question, "How does staff justify ignoring plant added from December 31, 2000, through the Company's proposed cutoff date of March 31, 2001, in its analysis?"

Q. Did the Company present any arguments to show why your December 31, 2000, cut-off date was inappropriate?

A. The Company's arguments against using a December 31, 2000, cut-off date are as follows:

1. Recent Commission decisions support the Company's cut-off date of March 31, 2001, for including post-Test Year plant in rate base (Paradise Water Company, Decision No. 61831 and Far West Water Company, Decision No. 60437).

2. Staff accounting witness has audited and adjusted the final plant construction costs.

3. Staff cost of capital witness updated the cost of debt and capital structure to April 30, 2001.

Q. Does recognition of post-test year plant in the two cases identified by Arizona Water mean the post-Test Year plant should be recognized in all rate cases?

A. No, the merit of including post-Test Year plant in rate base should be evaluated on a case-by-case basis. The Arizona Administrative Code requires companies to use a historical Test Year as the basis of the financial information used to support their assertions for a permanent rate increase.

In Arizona Water's prior rate case, Decision No. 58120, dated December 23, 1992, the Commission recognized in rate base non-revenue producing plant placed in service twelve months after the Test Year; my recommendation in the current case is to, again, recognize

non-revenue producing, revenue neutral, post-test year plant in rate base twelve months after the Test Year.

Q. Company witness, Mr. Ralph Kennedy, stated in his rebuttal testimony, beginning on Page 19 at Line 7 that, "The Staff accounting witness has audited and adjusted the final project costs." Is this statement accurate?

A. No, this statement is not accurate. As I testified in my direct testimony, I used a cut-off date of December 31, 2000, to complete my audit. I did not consider plant after that date so I did not audit plant placed in service after that date.

Q. The Company argues that you were required to allow post-Test Year plant through April 2001 because the Staff cost of capital witness updated his cost of debt and capital structure to April 2001. Is this statement accurate?

A. No. Pro-forma adjustments are made to actual test year results and balances to obtain a normal or more realistic relationship between revenues, expenses, and rate base. Staff makes these adjustments on a case-by-case and an issue-by-issue basis. Normal ratemaking practice is to adjust the capital structure and capital cost to reflect on-going operations. Matching is essential for revenues, expenses, and rate base. Capital structure and capital costs are a separate issue.

Q. Was there another matter that you would like to discuss?

A. Yes. Staff Engineer, Marlin Scott, Jr., brought to my attention that the Company inadvertently reported a $65,910 amount in the Overgaard system as "Closed to Plant" at year-end 2000 when it was actually completed in the year 2001.[1] The plant value that I recommended in my direct testimony errantly includes this $65,910. I have prepared

[1] Company response to CSB 7-32 C and D for the Overgaard system.

Surrebuttal Schedule CSB-5 for the Overgaard system correcting for the error by removing an additional $65,910 from plant showing the correct plant value.

Q. Please summarize your position concerning post-test year plant.

A. I have not changed from my original position. A cut-off date of March 31, 2001, is not consistent with the Commission's normal treatment. The March 31, 2001, cut-off date does not provide reasonable assurance that the utility plant allowed in rate base would be synchronized with 1999 revenues and expenses. The Company controls the timing of plant additions and filings. For the aforementioned reasons, I continue to recommend that the Company's request to include plant placed in service from January 1, 2001, through March 31, 2001, be denied.

Accumulated Depreciation

Q. Did the Company raise any concerns about your pro-forma adjustments to accumulated depreciation for actual and post-Test Year plant additions?

A. Yes. The Company's primary concern is that the pro forma adjustments I made for depreciation expense did not match the adjustments I made for accumulated depreciation for actual and post-Test Year plant.

Q. The Company witness, Ralph Kennedy, states in his rebuttal testimony on Page 25, beginning at Line 8, "The entire ratemaking framework is based on consistent accounting entries. Staff's separate calculations of the debit and credit sides of an accounting adjustment are erroneous on their face." Are pro forma adjustments relating to post-Test Year plant recorded in a company's general ledger?

A. No. Pro forma adjustments relating to post-Test Year plant are not recorded. Pro forma adjustments reflect proposed ratemaking treatment. Pro forma adjustments do not directly affect accounting records. Therefore, whether or not the pro forma adjustment to

depreciation expense and accumulated depreciation are equal will have no effect on a company's financial records. None of the adjustments I recommended will cause an imbalance of debits and credits on the Company's books.

Q. Please discuss the ratemaking rationale used for making your pro forma adjustments to depreciation expense and accumulated depreciation.

A. I made the pro forma adjustments to accumulated depreciation for rate making purposes in order to synchronize (i.e. match) revenues, expenses and rate base to my December 31, 2000 cut-off date. In other words, I matched annual depreciation expense to the amount of plant recognized at December 31, 2000, and I recognized the amount of accumulated depreciation that would have occurred by that date for that plant. This required me to calculate depreciation on all plant from January 1, 2000, through December 31, 2000, and add it to the accumulated depreciation balance at December 31, 1999.[2] This adjustment is necessary to match the cut-off for plant and accumulated depreciation; otherwise accumulated depreciation would be under-stated, and an under-stated accumulated depreciation balance causes rate base to be over-stated.

Q. Was there another matter that you would like to discuss?

A. Yes. As previously discussed, I reduced the value of plant in the Overgaard system by $65,910 from the amount recommended in my direct testimony. The value of accumulated depreciation recommended in my direct testimony includes depreciation, using the half-year convention for the year 2000. I am revising accumulated depreciation to reflect the removal of the year 2000 depreciation on this plant to conform with my correction to plant. I have prepared Surrebuttal Schedule CSB-6.1 for the Overgaard system to correct for this adjustment.

[2] Post-Test Year plant was assumed to be in service in the year 2000. A half-year convention was used to calculate accumulated depreciation.

Q. Please summarize your position on calculating depreciation expense on actual and post-Test Year plant.

A. I have not changed from my original position. I matched the cut-off dates for plant and accumulated depreciation. The Company's proposed plant and accumulated depreciation fail to match. The Company's error in matching causes an over-statement of rate base.

The important issue is not matching the pro forma amounts for depreciation expense and the accumulated depreciation, rather, it is matching the balance of accumulated depreciation to the cut-off date for plant. Moreover, going outside the Test Year to include plant that will increase rate base, while ignoring the offsetting reduction to rate base (by not recognizing accumulated depreciation to the same cut-off date) is unfair to the customers of Arizona Water.

Construction Work In Progress ("CWIP")

Q. Please briefly review your reasons for excluding CWIP from rate base.

A. I excluded CWIP from rate base for three reasons: (1) CWIP is not used and useful, (2) the Commission normally only allows plant that is used and useful in rate base and (3) most CWIP that existed at the end of the Test Year would have been closed to plant in the year 2000. I recommended including revenue neutral 2000 plant additions in rate base. Therefore, including CWIP in rate base would result in double counting.

Q. Did the Company present arguments to show why any of your reasons for excluding CWIP from rate base were inappropriate?

A. No, the Company did not.

Q. Why did the Company include CWIP in rate base?

A. The Company witness, Mr. Ralph Kennedy, on Page 28 at Line 23 through Page 29 at Line 1 of his testimony proposes that CWIP should be included in rate base in the same way as prepayment, materials, supplies and required bank balances are components of working capital in rate base.

Q. Do you agree with the Company's reasoning?

A. No, I do not. The Company's reasoning does not follow widely accepted ratemaking principles. Additionally, the Commission normally excludes CWIP as a component of working capital. Further, the Arizona Administrative Code R14-2-103 in Schedule B-5 "Computation of Working Capital" sets forth a working capital calculation, and CWIP is not included in that calculation. The nature of CWIP is different than prepayments, materials and supplies, and bank balances. The balances for CWIP vary with the Company's capital improvement and growth requirements. The components of working capital are dependent upon the Company's operating requirements.

Q. Please summarize your position on including CWIP in rate base.

A. I have not changed from my original position. I excluded CWIP from rate base for three reasons: (1) CWIP is not used and useful, (2) the Commission normally only allows plant that is used and useful in rate base, and (3) most CWIP that existed at the end of the Test Year would have been closed to plant in the year 2000 and is already included in my recommended rate base. The Company's request to include CWIP in rate base because it is a type of advance payment is neither consistent with widely accepted ratemaking principles, nor consistent with the Arizona Administrative Code. Therefore, CWIP should not be included in rate base.

Cash Working Capital

Q. Is the Company's proposed method of calculating cash working capital in the current case the same as the method used by the Commission in the prior case?

A. No. The basic methodology proposed by the Company is the same, but, in the current case, the Company also proposes to include the rate increase and related taxes in the calculation of dollar days revenue lag, a component of its cash working capital calculation. In the Company's prior rate case, the Commission rejected the Company's request to include the rate increase and related taxes in the cash working capital calculation. In Decision No. 58120 (December 23, 1992) the Commission stated, "The Commission will reject Applicant's proposal to include the rate increase and associated taxes in the revenue lag computation. It is not customary to base a lead-lag study on prospective revenues and the Company has offered no theoretical justification for doing so in this case."

Further, in the current case, the Company proposes to include the return on net invested capital needed to pay dividends on common stock in its calculation of dollar days revenue lag. Shareholder dividends are not working capital operating requirements and should not be included in the calculation of cash working capital.

Q. How is rate base impacted by the Company's proposal to include the rate increase, related taxes, and return in its cash working capital calculation?

A. The Company's rate base is overstated.

Q. Is it the Commission's current practice to use the same method of calculating cash working capital as that used in the Company's prior rate case?

A. No. Ten years ago, the Commission used a method of calculating cash working capital similar to that proposed by the Company,[3] but the Commission uses a more accurate

[3] With the exception of including the rate increase and related taxes in its calculation of revenue lag days.

method today. The Commission in recent decisions has indicated a preference toward using a different method that finds the cash working capital by calculating the difference between the average revenue lag days and expense lag days and multiplying this difference by the average daily payments.[4] I used this method to calculate the cash working capital shown on Schedule CSB-7.1 for each system of the Northern Group.

In addition to the Commission recently approving this method for two large water companies, the method is widely used within the utility industry, and has been recognized and taught in NARUC sponsored seminars as a reasonable and an acceptable method of calculating cash working capital. The current method eliminates the inherent errors that exist in the Company's method. The Company's method erroneously includes non-cash items in the calculation.

Q. Did the Company raise concerns about your calculation of cash working capital?

A. Yes. The Company raised three primary concerns. First, the Company asserted that Staff's claim that the Company did not calculate the lag days or dollar days on an individual basis is incorrect. Second, the Company asserted that Staff's claim that the Company included depreciation expense and deferred income tax in its calculation of dollar days is incorrect. Third, the Company disputed Staff's position that interest expense should be included in the calculation of dollar days expense lag.

Q. Have you reconsidered whether the Company calculated the lag days or dollar days on an individual basis?

A. Yes. I agree that the Company calculated the expense lag days and expense dollar days on an individual system basis and I appreciate the Company identifying that error in my testimony. In fact, I used the Company's system level detail for the lead-lag study and

[4] Paradise Water Company, Decision No. 61831 and Far West Water Company, Decision No. 60437.

incorporated that information in my direct testimony lead-lag schedules presented on Schedule CSB-7.1 for each of the five systems.

Q. Would you please clarify if the Company's treatment of depreciation expense and deferred income tax expense in its calculation of cash working capital is incorrect?

A. Yes. The Company's method of calculating cash working capital is fundamentally flawed. Using the Company's method, excluding depreciation expense or deferred income tax expense from the calculation of dollar lag expense days actually maximizes the effective increase to cash working capital. Maximization of cash working capital by excluding expense items in the calculation of dollar lag expense days is an inherent error in the Company's method.

Under the Company's method, cash working capital is increased by increasing the excess of dollars days revenue lag over dollar day expense lag. Thus, by excluding expenses from the dollar day expense lag calculation, the Company increases cash working capital. A proper lead-lag study that compares days revenue lag to days expense lag, such as mine, is not subject to this bias.

Q. Do you agree with the Company's assertion that interest expense should be excluded from the calculation of dollar days expense lag?

A. No. The Company asserts that interest expense should be excluded from the working capital computation because ". . . none of these disbursements represents an expense incurred in providing service to which any revenue relates." The Company's assertion is erroneous. Interest expense is a component of return and, therefore, a component of revenue. Interest expense requires a cash payment. The Company collects cash used to make interest payments prior to the interest due date. While Arizona Water has

possession of these funds, they are a source of cost-free cash that the Company can use until making payments to the bondholders.

Q. Please summarize your position on the calculation of cash working capital.

A. I have not changed from my original position. In recent decisions, the Commission has not approved the method proposed by the Company to calculate cash working capital. The Company's method is flawed. The Company's method treats non-cash expenses inappropriately. The Company's method also inappropriately includes the rate increase and associated taxes, and the return on net invested capital needed to pay dividends on common stock in its calculation of dollar day revenue lag, a component of its cash working capital calculation. Additionally, the Company excludes interest expense, a cash item, from its calculation of dollar day expense lag. For the aforementioned reasons, I continue to recommend that the Commission not adopt the Company's proposed method of calculating cash working capital.

OPERATING INCOME

Property Tax

Q. Did the Company raise concerns about your calculation of property tax expense?

A. Yes. The Company raised five primary concerns. First, the Company claims that Staff's December 31, 2000, cut-off date for post-Test Year plant is inconsistent with recognizing a property tax method that will not be implemented until the year 2002. Second, the Company claims that I used the wrong years and revenue amounts to determine the revenue to be used in the property tax formula. Third, the Company claims that I should have used the $1,201,254 balance for construction work in progress at December 31, 2000, instead of the Test Year end balance. Fourth, the Company claims that I erroneously subtracted $166,599 for the book value of licensed vehicles. Fifth, the

Company claims that I calculated a composite property tax rate for the Lakeside system and inappropriately applied that rate to the other four systems.

Q. Would you please address the Company's first and second concerns?

A. Yes. I adopted the Department of Revenue ("DOR") formula and used inputs that produced a normalized level of property tax expense. I adopted the new DOR method because I considered the effect of using the new method to be a known and measurable change. Known and measurable changes are adjustments to the Test Year to reflect on-going levels of costs. Known and measurable changes are not all conveniently tied to a specific date as the Company suggests is necessary. If changes are known and measurable, then they should be adopted.

Property tax expense under the new DOR method is primarily dependent upon revenue. The new method uses the average of three years' revenues with a two-year lag between the year of billing and the most recent of the years included in the average. For example, a property tax bill issued in August 2002 will be based on revenues for the years 1998, 1999, and 2000.

The Company's property tax expense will increase in future years if its revenues increase as the result of a rate increase. However, there is a two-year lag between the year of a rate increase and the year the increase is reflected in property tax expense. I have normalized property tax expense to recognize that the Company will experience an increase in its property taxes two years into the future.

I normalized property tax expense by using an average revenue in the property tax calculation that is weighted to include one year of recommended revenue and two years of

Test Year revenue. Normalizing property tax in this manner provides the Company with full recovery of property taxes over a three-year period following a rate case.

Q. Do you agree with the Company's claim that the December 31, 2000 balance for CWIP of $1,201,254 for the Northern Group should be included in the property tax calculation?

A. No. The Company provided no justification for using the December 31, 2000 CWIP balance in the calculation of property tax. The correct CWIP balance to include in the property tax calculation is the Test Year ending balance. I used the Test Year ending balance in the calculation of property tax expense.

Q. Do you agree with the Company's claim that removing the book value of leased vehicles in the calculation of property taxes is inappropriate?

A. No. I verified with an official at the Property Valuation and Equalization Section of the DOR that the net book value of vehicles is deducted in the calculation of "Full Cash Value" whether purchased or leased.

Q. Do you have any other comments regarding the Company's proposed method of calculating property taxes?

A. Yes. I also verified that the full cash value is multiplied by the assessment ratio, currently 0.25, to determine the assessed value that is used in the property tax computation. The Company failed to recognize use of the assessment ratio in its calculation of property taxes.

Q. Do you agree with the Company's claim that you calculated a composite property tax rate for the Lakeside system and inappropriately applied that same rate to the other four systems?

A. Yes. I prepared Surrebuttal Schedules CSB-17 for the Overgaard, Sedona, Pinewood, and Rimrock systems to present revised property tax calculations using the individual tax rate for each system.

Q. Please summarize your position on the calculation of property tax.

A. With the exception of revising the property tax calculations to reflect the tax rates specific to the individual systems, I have not changed from my original position.

Income Tax

Q. Did the Company raise concerns about your calculation of income tax expense?

A. Yes. The Company raised one primary concern. The Company asserts that state and federal income taxes should be calculated on a corporate-wide basis instead on an individual system basis.

Q. Is the Company's proposal to calculate the state and federal income taxes for the Northern Group on a company-wide basis consistent with past Commission decisions on this issue?

A. No. The Commission has consistently calculated the income tax separately for individual systems within a company. To name a few examples, the income taxes were calculated on an individual system basis for (1) Citizens Utilities Company (2) the water and sewer systems of Far West Water Company and (3) the water and sewer systems of Sedona Venture Company. In Arizona Water's prior rate proceeding, Decision No. 58120 (December 23, 1992), the Commission adopted Staff's recommendation to recognize income tax on an individual system basis. Page 19, Line 5, of that Decision states, "Staff calculated income tax expense by applying the Company's effective federal tax rate . . . and state tax rate . . . to Staff's adjusted net operating income for each system (emphasis added)." The Commission did not accept Arizona Water's method.

Q. Did the Company find any problems with your income tax formula other than its claim that it should have been calculated on a company-wide basis?

A. No, the Company agreed that the income tax formula I used produces the correct result for given income levels. The Company stated on Page 38, beginning at Line 15 of Ralph Kennedy's rebuttal testimony, ". . . the program will produce the correct result for a single company . . ."

Construction Revenue

Q. Did the Company raise concerns about adding back the Company's Test Year revenues from the sale of construction water?

A. Yes. The Company raised one primary concern. The Company claims that construction water revenues vary widely and should be averaged over five years.

Q. Do you agree that construction water sales revenue varies widely?

A. Yes.

Q. Do you agree with the Company's proposal to recognize each system's five-year average revenue?

A. Averaging several years' use is a reasonable method of normalizing a widely varying revenue or expense. However, if the Commission were to adopt such a method, I recommend use of a three-year average (1997, 1998, and 1999) to better coincide with building cycles. Also, if the Commission should adopt a three-year average, Pumping Power Expense should be adjusted to reflect the cost of the adjusted sales.

Rate Case Expense

Q. Did the Company raise concerns about your determination of rate case expense?

A. Yes. The Company raised one primary concern. The Company claims that a comparison of Arizona Water's rate case expense to Far West Water Company, Paradise Valley Water Company, and Bermuda Water Company is inappropriate because Arizona Water has five systems whereas the other companies have only one system.

Q. Would you please explain why your comparison of Arizona Water's rate case expense to Far West Water Company, Paradise Valley Water Company, and Bermuda Water Company is appropriate?

A. Yes. My comparison of Arizona Water's rate case expense to Far West Water Company, Paradise Valley Water Company, and Bermuda Water Company is appropriate for the following reasons:

1. The costs of paying the salaried accounting and engineering staff to analyze, accumulate, summarize and report the financial information for the five individual systems filed in the application was not included in the Company's $216,000 rate case expense request. This is because the Company's salaried employees are paid the same amount whether or not the Company files a rate case. The cost of preparing the financial information to be filed for the Company's five systems is not significantly different than the cost of a large water company with only one system, and therefore my comparison is appropriate.

2. Arizona Water filed only one application, paid for only one cost of service study, will attend only one hearing and open meeting. It did not file five separate applications, pay for five separate cost of capital studies, nor will it have to attend five separate hearings or open meetings. Therefore, my comparison of Arizona Water to other large water companies with only one system is appropriate.

3. I compared Arizona Water's request for $216,982 in rate case expense to Far West Water Company's ("Far West") request for $215,000 in rate case expense. Far West requested to include $7.4 million for construction of water treatment plant in rate base. In April 1999, Far West filed an application for interim rates. In July 1999, the Commission granted interim rates pending the outcome of the permanent rate case.

At the January 2000 hearing for Far West's permanent rates; Staff, RUCO and Far West proposed rate case expense of $80,000 amortized over four years. The hearing was re-opened on April 14, 2000, for the post-hearing audit of completed plant. In the settlement agreement, Staff and Far West proposed rate case expense of $160,000 to account for additional costs incurred due to the complexities of the case. In Far West's rejoinder testimony, the Company requested $215,443. The Commission only allowed $120,000. At this time, I do not anticipate that Arizona Water will encounter the same level of complexities as that experienced by Far West.

Q. Do you have any other concerns about the Company's rate case expense?

A. Yes. The Company's proposed rate case expense includes $15,000 for contingencies. Ratepayers should not have to pay for potential contingencies, only for actual and reasonable costs.

Q. Please summarize your position on rate case expense.

A. I have not changed my original position. Arizona Water is similar to Far West Water Company. The Commission, in Decision No. 62649, reduced Far West's $215,000 rate case expense actually incurred to $120,000.[5] I do not anticipate that Arizona Water will encounter the same level of complexities as that experienced by Far West. Therefore, I continue to recommend that the Commission adopt my proposed $100,000 rate case expense amount.

Depreciation Expense

Q. Did the Company raise concerns about your pro-forma adjustments to accumulated depreciation for actual and post-Test Year plant additions?

A. Yes. The Company raised three primary concerns:

[5] The Company claimed it actually incurred $215,000. Staff did not audit the amount.

1. I made a typographical error on Schedule CSB-16 for the Rimrock system.

2. I recommended component depreciation rates.

3. My pro forma adjustment for depreciation expense does not match my pro forma adjustment for accumulated depreciation expense.

Q. Did the typographical error have any impact on your rate base schedule or income statement?

A. No. The typographical error had no impact on my rate base schedule or income statement. I used the correct amounts on the rate base schedule and income statement.

Q. Do you believe that changing to component depreciation rates would be in the public interest?

A. Yes. I believe that the long-run benefits of changing from a composite to component depreciation rates would be in the public interest. Component rates provide customers with a better estimate of the actual cost of services during an accounting period from the use of plant in the revenue generation process. Component rates also provide better matching of cost recovery and asset utilization and consumption in each accounting period.

Q. Please address the Company's concern that your pro forma adjustment for depreciation expense does not match your pro forma adjustment for accumulated depreciation expense.

A. As I discussed earlier, the important issue is not matching the pro forma amounts for depreciation expense and the accumulated depreciation, rather, it is matching the balance of accumulated depreciation to the cut-off date for plant. Moreover, going outside the Test Year to include plant that will increase rate base, while ignoring the offsetting reduction to rate base (by not recognizing the accumulated depreciation to the same cut-off date) is unfair to the customers of Arizona Water.

Q. Was there another matter that you would like to discuss?

A. Yes. As previously discussed, I reduced the value of plant in the Overgaard system by $65,910 from the amount recommended in my direct testimony. The value of depreciation expense recommended in my direct testimony includes depreciation, using the half-year convention for the year 2000. I am revising depreciation expense to reflect the removal of the year 2000 depreciation on this plant to conform with my correction to plant. I have prepared Surrebuttal Schedule CSB-16 for the Overgaard system to correct for this adjustment.

Rate Design

Q. Did the Company raise concerns about your rate design?

A. Yes. The Company raised five primary concerns (sufficiency, stability, simplicity, feasibility, and customer acceptance) about the tiers used in my rate design.

Q. Please address the Company's revenue sufficiency concern about your rate design?

A. The Company's customer demand will not change significantly in the short run (i.e. a year or less) because of the tiers I used in my proposed rate design. A recent study funded by the American Water Works Association Research Foundation and the United States Bureau of Reclamation found that, in the short run, water demand responds very little to changes in price of water primarily because water service has no close substitutes. Consequently, the Company will not experience any significant decrease in customer usage. In the long-run, if the Company finds that customer usage is significantly decreasing, it can file an application to increase its rates. Further, I would like to mention that any number of items other than a tiered rate structure can affect customer usage. For example, the amount of rain customers receive, an increase in rates (regardless of the rate structure), and employment levels can affect customer use. Therefore, the Company's

argument that my tiered rate structure alone will cause customer usage to decrease is inaccurate.

Q. Please address the Company's concerns about revenue stability.

A. The shift in revenue from commodity to minimum charges in the rate design I propose is insignificant. Thus, revenue stability is largely preserved at the existing level with my proposed rates. In addition, the inelasticity of demand for water provides a large degree of inherent revenue stability.

Q. Please address the Company's concerns about simplicity, feasibility, and customer acceptance.

A. Companies and customers throughout the state have implemented and accepted tiered rate structures. A relatively large utility such as Arizona Water should have no more difficulty implementing tiered rates than the Class D and E water utilities that have accomplished this task successfully.

ACCOUNTING ORDER REGARDING ARSENIC

Q. Have you changed your position on the accounting order related to arsenic treatment and disposal?

A. No. I continue to assert that the issue is not ripe. The Company should file for an accounting order after the requirement for arsenic treatment is released in February 2002. At that time, the costs of arsenic treatment and disposal for the Company will be better defined.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

Arizona Water Company - Overgaard
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Surrebuttal Schedule CSB-5

RATE BASE ADJUSTMENT NO. 1 - PLANT IN SERVICE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED
1	Actual Test Year Plant	$ 6,817,861	$ -	$ 6,817,861
2	Post-Test Year Plant	$ 1,004,759	$ (849,005)	$ 155,754
3	**Adjusted Test Year Plant**	**$ 7,822,620**	**$ (849,005)**	**$ 6,973,615**

References:

Column [A]: Company Schedule B-2, Page 3
Column [B]: Testimony, CSB, Company Data Request Response CSB 7-32, Part C and D
Column [C]: Column [A] + Column [B], Schedule CSB 6.1

Arizona Water Company - Overgaard
Docket No. W-1445A-00-0962
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Surrebutal Schedule CSB-6.1

RATE BASE ADJUSTMENT NO. 2 - ACCUMULATED DEPRECIATION EXPENSE ON POST-TEST YEAR PLANT

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	**Depreciation Expense on Post-Test Year Plant**	**$ 26,023**	**$ (24,020)**	**2,003**
2				

3 References:
4 Column [A]: Company Schedule B-2, Page 3
5 Column [B]: Testimony, CSB, Company Data Request Response CSB 7-32, Part C and D
6 Column [C]: Column [A] + Column [B], Column [F] Line 34
7
8

9				[D]	[E]	[F]
10	ACCT.	W/A				DEPRECIATION EXPENSE
11	NO.	NO.	DESCRIPTION	COMPANY AS FILED	DEPRECIATION RATE	PER STAFF
12	310	2580	Land, Source of Supply	$ 1,050	0.00%	$ -
13	321	Blanket	Pumping Plant Struct & Improv	$ 917	2.59%	$ 24
14	325	2942	Electric Pumping Equipment	$ 21,798	2.59%	$ 565
15	325	Blanket	Electric Pumping Equipment	$ 20,117	2.59%	$ 521
16	332	Blanket	Water Treatment Equipment	$ 4,239	2.59%	$ 110
17	342	Blanket	Storage Tanks	$ 311	2.59%	$ 8
18	343	2314	Trans and Distr Mains	$ -	2.59%	$ -
19	343	2582	Trans and Distr Mains	$ 78,284	2.59%	$ 2,028
20	343	Blanket	Trans and Distr Mains	$ 17,092	2.59%	$ 443
21	348	Blanket	Hydrants	$ 4,617	2.59%	$ 120
22	391	Blanket	Office Furniture & Equipment	$ 75	2.59%	$ 2
23	394	Blanket	Tools, Shop & Garage Equip	$ 5,072	2.59%	$ 131
24	396	Blanket	Power Operated Equip	$ 126	2.59%	$ 3
25	397	Blanket	Communications Equip	$ 1,820	2.59%	$ 47
26	398	Blanket	Miscellaneous Equip	$ 235	2.59%	$ 6
27	Total			$ 155,753		$ 4,007
28						
29					Half-year convention factor:	0.5
30					Post-Test Year Accumulated Depr Accrual:	$ 2,003

References:
Column [D]: CSB 1-5, CSB 7-32, Onsite Data Request JDL-1
Column [E]: Company Depreciation Study
Column [F]: Column [A] x Column [B]

Arizona Water Company - Overgaard
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Surrebuttal Schedule CSB-16

OPERATING INCOME ADJUSTMENT NO. 7 - DEPRECIATION EXPENSE ON POST-TEST YEAR PLANT

		[A]	[B]	[C]
LINE NO.	DESCRIPTION	COMPANY AS FILED	STAFF ADJUSTMENT	STAFF AS ADJUSTED
1	**Depreciation Expense on Post-Test Year Plant**	**$ 26,023**	**$ (21,268)**	**$ 4,755**

References:
Column [A]: Company Schedule C-2, Page 7
Column [B]: Testimony, CSB
Column [C]: Column [A] + Column [B]

				[D]	[E]	[F]
LINE NO.	ACCT. NO.	W/A NO.	DESCRIPTION	COMPANY AS FILED	DEPRECIATION RATE	DEPRECIATION EXPENSE PER STAFF
1	310	2580	Land, Source of Supply	$ 1,050	0.00%	$ -
2	321	Blanket	Pumping Plant Struct & Improv	$ 917	2.86%	$ 26
3	325	2942	Electric Pumping Equipment	$ 21,798	5.88%	$ 1,282
4	325	Blanket	Electric Pumping Equipment	$ 20,117	5.88%	$ 1,183
5	332	Blanket	Water Treatment Equipment	$ 4,239	2.86%	$ 121
6	342	Blanket	Storage Tanks	$ 311	2.00%	$ 6
7	343	2314	Trans and Distr Mains	$ -	1.79%	$ -
8	343	2582	Trans and Distr Mains	$ 78,284	1.79%	$ 1,401
9	343	Blanket	Trans and Distr Mains	$ 17,092	1.79%	$ 306
10	348	Blanket	Hydrants	$ 4,617	1.82%	$ 84
11	391	Blanket	Office Furniture & Equipment	$ 75	6.67%	$ 5
12	394	Blanket	Tools, Shop & Garage Equip	$ 5,072	4.00%	$ 203
13	396	Blanket	Power Operated Equip	$ 126	6.67%	$ 8
14	397	Blanket	Communications Equip	$ 1,820	6.67%	$ 121
15	398	Blanket	Miscellaneous Equip	$ 235	3.33%	$ 8
16	Total			$ 155,753		$ 4,755
17						

References:
Column [D]: CSB 1-5, CSB 7-32, Onsite Data Request JDL-1
Column [E]: Company Depreciation Study
Column [F]: Column ~~[A]~~ [D] x Column ~~[B]~~ [E]

Arizona Water Company - Overgaard
Docket No. W-01445A-00-0962
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Surrebuttal Schedule CSB-17

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	1999 Staff Adjusted Test Year Revenues			$ 973,160
2	Weight Factor			$ 2
3	Subtotal (Line 1 x Line 2)			$ 1,946,320
4	Staff Recommended Revenue			$ 1,009,977
5	Subtotal (Line 2 + Line 3)			$ 2,956,297
6	Number of Years			$ 3
7	Three Year Average (Line 5 / Line 6)			$ 985,432
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			$ 1,970,865
10	Plus: 10% of 1999 CWIP			$ -
11	Less: Net Book Value of Licensed Vehicles (See Note A Below)			$ 31,308
12	Full Cash Value (Line 9 + Line 10 - Line 11)			$ 1,939,556
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			$ 484,889
15	Composite Property Tax Rate (See Note B Below)			0.048776271
16	**Staff Proposed Property Tax Expense (Line 14 x Line 15)**	**$ 64,948**	**$ (41,297)**	**$ 23,651**

Note A: Net Book Value of Licensed Vehicles calculated from vehicle lease invoice for January 2000.

Note B: Composite property tax rate calculated from AWC's property tax bills for the year 2000.

References:
Column A: Company Schedule C-1, Page 3
Column B: Testimony, CSB
Column C: Column [A] + Column [B]

Arizona Water Company - Sedona
Docket No. W-01445A-00-0962
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Surrebuttal Schedule CSB-17

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	1999 Staff Adjusted Test Year Revenues			$ 2,192,602
2	Weight Factor			$ 2
3	Subtotal (Line 1 x Line 2)			$ 4,385,204
4	Staff Recommended Revenue			$ 2,557,085
5	Subtotal (Line 2 + Line 3)			$ 6,942,289
6	Number of Years			$ 3
7	Three Year Average (Line 5 / Line 6)			$ 2,314,096
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			$ 4,628,193
10	Plus: 10% of 1999 CWIP			$ -
11	Less: Net Book Value of Licensed Vehicles (See Note A Below)			$ 31,308
12	Full Cash Value (Line 9 + Line 10 - Line 11)			$ 4,596,884
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			$ 1,149,221
15	Composite Property Tax Rate (See Note B Below)			0.041707739
16	**Staff Proposed Property Tax Expense (Line 14 x Line 15)**	**$ 146,452**	**$ (98,521)**	**$ 47,931**

Note A: Net Book Value of Licensed Vehicles calculated from vehicle lease invoice for January 2000.

Note B: Composite property tax rate calculated from AWC's property tax bills for the year 2000.

References:
Column A: Company Schedule C-1, Page 3
Column B: Testimony, CSB
Column C: Column [A] + Column [B]

Arizona Water Company - Pinewood
Docket No. W-01445A-00-0962
Test Year Ended December 31, 1999

Surrebuttal Schedule CSB-17

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	1999 Staff Adjusted Test Year Revenues			$ 768,429
2	Weight Factor			$ 2
3	Subtotal (Line 1 x Line 2)			$ 1,536,858
4	Staff Recommended Revenue			$ 920,455
5	Subtotal (Line 2 + Line 3)			$ 2,457,313
6	Number of Years			$ 3
7	Three Year Average (Line 5 / Line 6)			$ 819,104
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			$ 1,638,209
10	Plus: 10% of 1999 CWIP			$ -
11	Less: Net Book Value of Licensed Vehicles (See Note A Below)			$ 31,308
12	Full Cash Value (Line 9 + Line 10 - Line 11)			$ 1,606,900
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			$ 401,725
15	Composite Property Tax Rate (See Note B Below)			0.050355105
16	**Staff Proposed Property Tax Expense (Line 14 x Line 15)**	**$ 45,020**	**$ (24,791)**	**$ 20,229**

Note A: Net Book Value of Licensed Vehicles calculated from vehicle lease invoice for January 2000.

Note B: Composite property tax rate calculated from AWC's property tax bills for the year 2000.

References:
Column A: Company Schedule C-1, Page 4
Column B: Testimony, CSB
Column C: Column [A] + Column [B]

Arizona Water Company - Rimrock
Docket No. W-01445A-00-0962
Test Year Ended December 31, 1999

Surrebuttal Schedule CSB-17

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	1999 Staff Adjusted Test Year Revenues			$ 328,303
2	Weight Factor			$ 2
3	Subtotal (Line 1 x Line 2)			$ 656,606
4	Staff Recommended Revenue			$ 371,410
5	Subtotal (Line 2 + Line 3)			$ 1,028,016
6	Number of Years			$ 3
7	Three Year Average (Line 5 / Line 6)			$ 342,672
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			$ 685,344
10	Plus: 10% of 1999 CWIP			$ -
11	Less: Net Book Value of Licensed Vehicles (See Note A Below)			$ 31,308
12	Full Cash Value (Line 9 + Line 10 - Line 11)			$ 654,036
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			$ 163,509
15	Composite Property Tax Rate (See Note B Below)			0.057117731
16	**Staff Proposed Property Tax Expense (Line 14 x Line 15)**	**$ 25,355**	**$ (16,016)**	**$ 9,339**

Note A: Net Book Value of Licensed Vehicles calculated from vehicle lease invoice for January 2000.

Note B: Composite property tax rate calculated from AWC's property tax bills for the year 2000.

References:
Column A: Company Schedule C-1, Page 3
Column B: Testimony, CSB
Column C: Column [A] + Column [B]

BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS	)	DOCKET NO. W-01445A-00-0962

SURREBUTTAL

TESTIMONY

OF

JOEL M. REIKER

SENIOR RATE ANALYST

UTILITIES DIVISION

AUGUST 21, 2001

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Executive Summary of the
Surrebuttal Testimony of
Staff Witness Joel M. Reiker
Senior Rate Analyst

EXECUTIVE SUMMARY
OF THE SURREBUTTAL TESTIMONY
OF STAFF WITNESS
JOEL M. REIKER
ARIZONA WATER COMPANY
DOCKET NO. W-01445A-00-0962

The surrebuttal testimony of Staff witness Joel M. Reiker addresses the following issues:

Updated Cost of Equity Estimates – Mr. Reiker provides updated cost of equity estimates, which reflect more recent information available to investors.

Response to the Rebuttal Testimony of Dr. Zepp – Mr. Reiker responds to the criticisms of his direct testimony contained in the rebuttal testimony of company witness Dr. Zepp.

Mr. Reiker responds to Dr. Zepp's contention that historical growth in dividends per share ("DPS") and estimates of near term growth in DPS should not be included in a DCF analysis. Mr. Reiker states that the price of a security is the discounted value of cash flows received by the investor, and investors receive dividends. Further, the discounted value of dividends in the first few years of owning a stock are reflected in a portion of its market price.

Mr. Reiker responds to Dr. Zepp's claim that an article written by Gordon, Gordon, and Gould shows that past DPS growth should not be included in a DCF cost of equity analysis. Mr. Reiker responds by pointing out that the Gordon, Gordon, and Gould article actually concluded that historical growth in earnings per share ("EPS") performed the worst in their study. Further, the Gordon, Gordon, and Gould article does not suggest that investors rely solely on analysts' forecasts of EPS growth when pricing stocks.

Mr. Reiker responds to Dr. Zepp's claim that whether or not analysts are optimistic in their forecasts is not the issue, the issue is whether investors rely on analyst forecasts. Mr. Reiker disagrees with the assumption that investors rely solely on analysts' forecasts of EPS growth in forming their expectations of dividend growth. Mr. Reiker also states that to the extent that investors are aware of the bias in analysts' EPS forecasts, they will adjust them downward. Mr. Reiker also cites statements by Professor Myron Gordon, in which Dr. Gordon acknowledged the general belief that analysts' forecasts of earnings growth tend to be optimistic and that a more reasonable estimate of growth would be an average of analysts' forecasts and a typically lower figure such as past growth in GNP.

Mr. Reiker responds to Dr. Zepp's comments on risk. Mr. Reiker subscribes to the theory of systematic versus unsystematic risk, which states that the only risks people care about are the ones that they cannot get rid of – the systematic ones. To the extent that the company-specific risks Dr. Zepp describes are peculiar to Arizona Water, they are unsystematic, and therefore would not be priced by the market. Mr. Reiker contends that rewarding Arizona

Executive Summary of the
Surrebuttal Testimony of
Staff Witness Joel M. Reiker
Senior Rate Analyst

Water with a higher rate of return to compensate for risks that are not priced by investors will result in windfall profits. Dr. Zepp fails to identify which of Arizona Water's company-specific risks would increase systematic risk, or how.

Mr. Reiker responds to Dr. Zepp's comments on the Wong article, which concluded that there is no need to adjust for the firm size in utility rate regulations. Dr. Zepp interprets the data in the Wong article as evidence that the "size effect" exists in the utility industry, when in fact, the data show that there is no statistically significant evidence that the "size effect" exists in the utility industry. Mr. Reiker states that the Commission should not consider Dr. Zepp's study of large and small water utilities in California for two reasons. First, The 97 basis point risk premium calculated by Dr. Zepp is statistically no different than zero. Second, Dr. Zepp's study is based on a convenience sample, and it cannot be used for statistical inference. Furthermore, because it only includes two companies in each class, we cannot eliminate the possibility that the results are little more than anecdote.

Mr. Reiker comments on the use of a historical test year. Mr. Reiker notes that Arizona Water has earned an average 12.45 percent ROE over the past eleven years, and its current rates were based on a historical test year.

Mr. Reiker continues to recommend a 10.25 percent ROE, an 8.48 percent cost of debt, and a 9.64 percent rate of return.

INTRODUCTION

Q. Please state your name and business address.

A. My name is Joel M. Reiker. My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Are you the same Joel M. Reiker who previously filed direct testimony in this proceeding?

A. Yes.

Q. Have you reviewed the rebuttal testimony of Arizona Water's ("Company") witness Thomas M. Zepp concerning your direct testimony?

A. Yes, I have.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to present updated cost of equity estimates. I also respond to criticisms of my direct testimony contained in the rebuttal testimony of Dr. Zepp.

UPDATED COST OF EQUITY ESTIMATES

Q. Why are you updating your cost of equity estimates?

A. I am updating my cost of equity estimates to reflect the most recent capital market information. The efficient markets hypothesis states that current prices reflect all publicly available information. Therefore, the most recent stock prices and Treasury yields should include investors' most recent expectations of future returns. These updates provide a range of appropriate and recent data on which the Commission can base a decision.

Updated DCF Estimates

Q. How did you update your DCF estimates?

A. I updated the stock prices of the sample water and electric companies to reflect prices after the close of the market on July 30, 2001, as reported by Yahoo Finance. This information is reflected in Schedule JMR-S4, Pages 1 and 2.

Q. What are the results of your updated DCF analysis?

A. Schedule JMR-S6 depicts the results of my updated DCF analysis. Table 1 and Table 2 show my updated DCF estimates along with my original DCF estimates:

Table 1

Sample Water Companies	Original Estimate	Updated Estimate
5-Year Dividends	7.34%	7.23%
5-Year Earnings	10.52%	10.40%
5-Year Sustainable	9.83%	9.83%
Projected Dividends	6.59%	6.48%
Projected Earnings	10.60%	10.48%
Projected Sustainable	12.23%	12.23%
Average	**9.52%**	**9.44%**

As shown in Table 1 above, my DCF estimates of the cost of equity to the sample water companies have, on average, declined by 7 basis points since the filing of my direct testimony.

Table 2

Sample Electric Companies	Original Estimate	Updated Estimate
5-Year Dividends	7.62%	7.92%
5-Year Earnings	12.89%	13.20%
5-Year Sustainable	9.37%	9.67%
Projected Dividends	7.37%	7.67%
Projected Earnings	10.57%	10.88%
Projected Sustainable	12.36	12.67%
Average	**10.03**	**10.34**

As shown in Table 2, my DCF estimates of the cost of equity to the sample electric companies have, on average, increased by 31 basis points since the filing of my direct testimony.

Updated CAPM Estimates

Q. How did you update your CAPM estimates?

A. I updated the risk-free rate and the current market risk premium. This information is reflected in Schedule JMR-S6, Pages 1 and 2.

My updated risk-free rate is simply the average spot yield on 5-, 7-, and 10-year U.S. Treasuries, as reported in the July 30, 2001 edition of the Wall Street Journal.[1] My updated current market risk premium was calculated in the same manner as in my direct testimony, using my updated DCF estimates discussed above.

Q. What are the results of your updated CAPM analysis?

A. Schedule JMR-S6, Pages 1 and 2, depict the results of my updated CAPM analysis. The following tables show my updated CAPM estimates along with my original CAPM estimates:

[1] Average yield on 5-, 7-, and 10-year Treasury notes according to the July 30, 2001, Wall Street Journal: 4.58%, 4.90%, and 5.10%, respectively.

Table 3

Sample Water Companies	Original Estimate	Updated Estimate
Historical Market Risk Premium	10.18%	9.88%
Current Market Risk Premium - Low	6.07%	5.80%
Current Market Risk Premium - High	11.74%	11.57%
Average	**9.33%**	**9.08**

As shown in Table 3 above, my CAPM estimates of the cost of equity to the sample water companies have, on average, declined by 25 basis points since the filing of my direct testimony.

Table 4

Sample Electric Companies	Original Estimate	Updated Estimate
Historical Market Risk Premium	9.75%	9.45%
Current Market Risk Premium - Low	6.85%	6.99%
Current Market Risk Premium - High	12.37%	12.52%
Average	**9.66**	**9.65**

As shown in the above table, my CAPM estimates of the cost of equity to the sample electric companies have, on average, decreased only slightly since the filing of my direct testimony.

Q. Are you changing your recommended return on equity ("ROE") at this time?

A. No. I continue to recommend a 10.25 percent ROE.

RESPONSE TO THE REBUTTAL TESTIMONY OF DR. ZEPP

Dividend Growth

Q. Dr. Zepp criticizes your use of past dividend per share ("DPS") growth and near-term forecasts of increases in DPS, saying that they are the "absolute worst" indicator of future

growth, and should be excluded from your analysis (See rebuttal testimony of Dr. Thomas M. Zepp. p. 8 at 8-21). Please comment.

A. Dr. Zepp claims that DPS growth is the worst indicator of future growth when an industry is in transition and companies within that industry are attempting to increase their financial strength. Dr. Zepp essentially argues to ignore DPS growth simply because it is lower than earnings growth, we know that forecasts for earnings are overstated. In the DCF model, the price of a security is the discounted value of cash flows received by the investor. Investors receive dividends not earnings per share ("EPS").

Q. How do you respond to Dr. Zepp's statement that past DPS growth would not be given any weight by rational investors?

A. Dr. Zepp qualifies his statement by saying:

> When DPS grow slower than EPS, it improves the prospects for long-term dividend growth as the companies increase their retention ratios and set the stage for higher sustainable growth (See rebuttal testimony of Dr. Thomas M. Zepp. p. 9 at 11-14).

I disagree with his statement. Just because a company slows dividend growth in the near-term to set the stage for higher sustainable growth, it does not stand to reason that investors ignore near-term dividend growth. Investors receive dividends, and the discounted value of dividends received in the first few years of owning a stock are reflected in a portion of its market price - whether DPS are expected to grow more rapidly in the future or not.

Q. Does the Gordon, Gordon, and Gould ("GG&G") article cited by Dr. Zepp support his argument that past DPS growth should not be included in a DCF cost of equity analysis?

A. No, it does not. Dr. Zepp uses the GG&G article to support his position not to include past DPS growth in the DCF analysis. On Page 9 of his rebuttal testimony, Dr. Zepp states:

Q. ARE THERE OTHER REASONS NOT TO INCLUDE PAST DPS GROWTH?

A. Yes. At Pages 14 and 22-23, Mr. Reiker acknowledges Professor Myron Gordon to be an authority on the DCF model.

> Dr. Gordon wrote an article with two other authors (Gordon, Gordon and Gould, "Choice Among Methods of Estimating Share Yield," *Journal of Portfolio Management (Spring 1989)* ("GG&G") in which he found analysts' consensus forecasts of future EPS growth provided better estimates of DCF growth than did past BR growth, past DPS growth and past EPS growth. In reaching that conclusion, GG&G say the superior performance by [forecasts of earnings growth] should come as no surprise. All four estimates of growth rely upon past data, but in the case of [forecasted earnings growth] a larger body of past data is used, filtered through a group of security analysts who adjust for abnormalities that are not considered relevant for future growth. (GG&G, page 54) (See rebuttal testimony of Dr. Thomas M. Zepp. p. 9 at 15-22.)

The GG&G article simply concluded that analysts' forecasts of growth in EPS outperformed past BR growth, past DPS growth, and past EPS growth in their study. The following quote from the article gives a better perspective:

> For our sample of utility shares, [forecasts of earnings growth] performed well, with [past BR growth], [past DPS growth], and [*past EPS growth] a distant fourth.*[2] (emphasis added)

The GG&G article concludes that the worst performer was past EPS growth, not past DPS growth, and that past EPS growth was distant in its inferiority.

Q. Does the GG&G article state that forecasts of EPS growth should be the only determinant of growth in the DCF model?

A. No. The article does not state that forecasted EPS growth is the only growth rate to be used in a DCF analysis. Furthermore, it does not suggest that investors rely solely on

[2] Gordon, David A., Myron J. Gordon, Lawrence I. Gould. "Choice Among Methods of Estimating Share Yield." *The Journal of Portfolio Management.* Spring 1989. p. 54.

analysts' forecasts of EPS growth when pricing stocks. Dr. Zepp seems to insist on relying exclusively on forecasted EPS growth as a proxy for forecasted DPS growth.

Analyst Forecasts

Q. In Footnote 2 of his rebuttal testimony, Dr. Zepp responds to your direct testimony, in which you reported that Professor Gordon expressed concern over analysts' forecasts. Dr. Zepp states:

> Either that quotation is taken out of context or Dr. Gordon changed his opinion when he subsequently conducted the study in which he endorsed analysts' forecasts (See rebuttal testimony of Dr. Thomas M. Zepp. p. 10, footnote 2).

How do you respond?

A. On May 8, 1998, approximately nine years *after* publication of the GG&G article, Professor Gordon provided the keynote Address at the 30th Financial Forum of the Society of Utility and Regulatory Financial Analysts, in which he stated:

> An interesting alternative to historical growth rates that became feasible about 10 to 15 years ago was security analyst forecasts of growth rates over the next 5 or so years, collected and distributed by IBES and other such data services. These estimates might differ across firms in a reasonable way, but there was good reason to believe that on average they were biased upward. First, they are short-term estimates, being a forecast of earnings growth over the next five years, not all future time. Second, security analysts tend to be optimistic and they get into less trouble if their forecast for a corporation is biased upward than if they are looked upon as negative in their outlook on the corporation. Negative statements about a corporation may result in reprisals against the analyst's employer.

Therefore, despite the study conducted in the GG&G article, as of 1998 Professor Gordon still had concerns regarding bias in analysts' forecasts.

Q. Did Professor Gordon have any comments regarding the appropriate growth rate to be used in his dividend growth model?

A. Yes. In referencing the Federal Energy Regulatory Commission's ("FERC") use of an average of security analysts' forecasts of the short-term earnings growth rate and a typically lower figure such as the past growth rate in GNP, Professor Gordon said:

> Such an average can be questioned on various grounds. However, my judgement is that between the short-term forecast alone and its average with the past growth rate in GNP, *the latter may be a more reasonable figure.* Furthermore, the above average may deserve regulatory consideration along with other plausible estimates of the cost of equity capital, in the absence of a superior method for taking advantage of security analyst forecasts. (emphasis added)

Dr. Zepp does not average his forecasted growth rates with any historical growth rates.

Q. Dr. Zepp claims that whether or not analysts are optimistic in their forecasts is not the issue. Instead, the issue is whether investors rely on analyst forecasts. (See rebuttal testimony of Dr. Thomas M. Zepp. p. 11 at 22.). Do you agree?

A. I would agree the issue of whether investors rely on analyst forecasts is important. However, I disagree with the assumption that investors rely *solely* on those forecasts. Dr. Zepp implies on Page 12 of his rebuttal testimony, that investors believe analyst forecasts to be correct. I also disagree with this assumption. To the extent that investors are aware of the widely reported bias in analyst forecasts, they will either adjust their forecasts appropriately (downward), or consider historical growth rates in addition to the forecast, as I have done.

Q. If you include historical growth rates together with analyst forecasts in a DCF analysis, are you double-counting the past, as Dr. Zepp claims? (See rebuttal testimony of Dr. Thomas M. Zepp. p. 14 at 6-14.)

A. To the extent that professional analysts have considered historical growth in their forecasts, yes. However, as Dr. Zepp claims, the issue is which growth rate investors rely

on. It is reasonable to assume that investors consider historical growth along with analyst forecasts, therefore, it is reasonable to "double-count" the past in a DCF analysis.

Systematic Risk

Q. Dr. Zepp characterizes systematic risk as a simple theory derived from the CAPM – one that you appeal to when dismissing Arizona Water's firm-specific risk. Please respond.

A. I agree. The theory of systematic and unsystematic risk is a simple theory; however, the fact that it is a simple theory does not render it irrelevant. Brealey, Myers, and Marcus' ("BM&M") text describes the theory of systematic (nondiversifiable) and unsystematic (diversifiable) risk as one of the "six most important ideas in finance."[3] Exhibit JMR-S1 is an excerpt from BM&M's text *Fundamentals of Corporate Finance* which describes the six most important ideas in finance. In discussing the CAPM, BM&M say the following:

> Again, it is an attractively simple idea. There are two kinds of risks – those that you can diversify away and those that you can't. *The only risks people care about are the ones that they can't get rid of – the nondiversifiable* [systematic] *ones.*[4] (emphasis added)

Q. Can you give a better explanation of unsystematic, or "firm-specific" risk?

A. Yes. According to BM&M, unsystematic or firm-specific risks are "risk factors affecting only that firm." Unsystematic risk is also referred to as "unique risk," "diversifiable risk," "residual risk," "specific risk," or "microeconomic risk." Page 236 of the BM&M text describes unsystematic risk:

> [Unsystematic] risk stems from the fact that many of the perils that surround an individual company are peculiar to that company and perhaps its direct competitors.

Therefore, to the extent that the company-specific risks Dr. Zepp describes are peculiar to Arizona Water, they are unsystematic.

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[3] Brealey, Richard, Stewart C. Myers, Alan J. Marcus. *Fundamentals of Corporate Finance.* 1995. McGraw-Hill. New York. pp. 664-665.

[4] Brealey, Richard, Stewart C. Myers, Alan J. Marcus. *Fundamentals of Corporate Finance.* 1995. McGraw-Hill. New York. pp. 664-665.

Q. Dr. Zepp states that "the U.S. Supreme Court has laid out specific requirements that the authorized ROE for Arizona Water be set at a level high enough to attract capital on reasonable terms (See rebuttal testimony of Dr. Thomas M. Zepp. p. 24 at 21-23)." Please comment.

A. In *Bluefield Water Works & Improvement Co. v. Public Serv. Commission* (1923) 262 U.S., 679, 692-93, the Court said:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; *but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.* The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

Increasing the rate of return to compensate the Company for risks that are not priced by investors will result in windfall profits for Arizona Water.

Q. On Page 24, Line 17, of his rebuttal testimony, Dr. Zepp states that "A number of the risks I have identified that do not necessarily increase beta risk would increase the other 'systematic risk factors.'" Please comment.

A. First, Dr. Zepp fails to identify which of Arizona Water's firm-specific risks would increase these other "systematic risk factors." Second, he fails to identify what these other "systematic risk factors" are and how they would increase beta risk. Finally, this argument does not make sense because systematic risk and beta are equivalent. If systematic risk increases, beta will increase.

Q. Does Dr. Zepp's calculation of an adjusted beta for Dominguez Water Company show that smaller water companies are riskier than larger ones?

A. No. On Page 25 of his rebuttal testimony, Dr. Zepp states,

> Several years ago, before Dominguez Water Company was purchased and it still had publicly traded stock, I estimated an adjusted beta of .79, when the California Public Utilities Commission ("CPUC") Staff estimated the average adjusted water utility beta was .58. Dominguez Water Company was about the same size as Arizona Water. If a small water utility such as Arizona Water were publicly-traded, it would undoubtedly have a beta in excess of .61 (the average beta for the large water utilities) and more than likely would have a beta closer to the .79 value I estimated for Dominguez Water Company.

This illustrates the dangers of introducing anecdotes as evidence.

Firm Size

Q. On Page 28 of his rebuttal testimony, Dr. Zepp claims that the Wong article cited on Page 31 of your direct testimony actually supports his contention that smaller utilities are riskier than larger ones. Do you agree?

A. No. Dr. Zepp miscommunicates Wong's conclusion that "the findings suggest that there is no need to adjust for the firm size in utility rate regulations."[5] Dr. Zepp cannot reasonably conclude that the data presented in Wong's Table 3 (Zepp rebuttal Schedule TMZ-7) shows that small utilities are riskier than large ones. Dr. Zepp is correct in pointing out that for the period 1978-1982, the size effect for utilities was significant at the 95% confidence level using weekly data and a one-tailed test. However, this is simply one data point in a total of 24, 23 of which are not significant. In each of the other time periods ranging from 1968 to 1987 the coefficients in Wong's Table 3 are not significantly different from zero. Wong's Table 3 shows that we can not conclude that betas and utility firm size are related.

[5] Wong, Annie. "Utility Stocks and the Size Effect: An Empirical Analysis." *Journal of the Midwest Finance Association.* 1993. p. 98.

Q. Should the Commission rely on Dr. Zepp's study of small and large California water utilities, which shows that smaller California water utilities had an equity cost that was on average 97 basis points higher than larger California water utilities? (see Direct testimony of Dr. Thomas M. Zepp, Table 6.)

A. No, the Commission should not rely Dr. Zepp's study for two reasons. First, Dr. Zepp's 97 basis point risk premium estimate is not statistically different from zero. In Schedule JMR-S8, Pages 1 and 2, I use Dr. Zepp's study to show (with 95 percent certainty) that the difference between the cost of equity to small and large water utilities cannot be said to be different from zero. Second, the Commission should not rely on Dr. Zepp's study because it only includes two companies in each class, therefore we cannot eliminate the possibility that the results are little more than anecdote. The Commission should, however, consider the conclusions of the Wong study, which was based on data from 152 electric and gas companies over twenty years.

Capital Structure

Q. How do you respond to Dr. Zepp's position that because Arizona Water is smaller "and thus requires a higher common equity ratio than the typical benchmark company" its capital structure does not make it less risky than the sample companies? (See rebuttal testimony of Dr. Thomas M. Zepp. p. 32 at 24-26.)

A. Dr. Zepp is effectively implying that because Arizona Water is small compared to the sample companies, its systematic risk remains constant as its equity ratio increases. I disagree. This assumption violates mainstream financial theory concerning the relationship between capital structure and beta – as a firm decreases its debt ratio, beta (risk) decreases.[6] Furthermore, Dr. Zepp supports his argument that small firms require larger common equity ratios by citing a study conducted by Scott and Martin (see rebuttal testimony of Dr. Thomas M. Zepp. p. 33 at 6-7), which found that smaller equity ratios

[6] Brealey, Richard, Stewart C. Myers, Alan J. Marcus. Fundamentals of Corporate Finance. 1995. McGraw-Hill. New York. p. 291.

(higher leverage use) are generally associated with larger companies. Scott and Martin calculated the equity ratio as common equity over total assets calculated at book value.[7] A more recent study conducted by Titman and Wessels found statistically significant results showing that smaller firms have higher long- and short-term debt ratios (as a percentage of book equity) than larger firms.[8]

Historical Test Year

Q. Do you have any comments on Dr. Zepp's insistence that the use of a historic Test Year increases risk?

A. Yes. I reiterate my direct testimony that Staff does make reasonable pro forma adjustments to actual Test Year results and balances to obtain a normal or more realistic relationship between revenues, expenses, and rate base.

Q. At Page 6, Line 29, of his direct testimony, Dr. Zepp states that "reliance on historic Test Years reduces the chance that Arizona Water will achieve its authorized return and thus raises risk." Does evidence show that Arizona Water has not earned its authorized 11.00 percent ROE?

A. No, it does not. Arizona Water has on average, achieved a 12.45 percent ROE over the past eleven years, well above its current authorized ROE of 11.00 percent under historical Test Year rate setting.[9] The following table shows Arizona Water's actual return on average equity for each of the past eleven years:

[7] Scott, David F., John D. Martin. "Industry Influence on Financial Structure." *Financial Management.* Spring 1975. pp. 68.
[8] Titman, Sheridan, Roberto Wessels. "The Determinants of Capital Structure Choice." *The Journal of Finance.* March 1988, pp. 1-19.
[9] Arizona Water's last rate cases filed on July 1, 1991. Decision No. 58120, dated December 23, 1992, granted Arizona Water an 11.00 percent ROE.

Table 5[10]

Year	ROE
1990	10.80%
1991	10.74%
1992	9.69%
1993	13.18%
1994	13.45%
1995	13.04%
1996	13.88%
1997	12.85%
1998	15.38%
1999	11.47%
2000	12.51%
Average	12.45%

RECOMENDED ROE AND OVERALL RATE OF RETURN ("ROR")

Q. Please summarize your recommendations.

A. I continue to recommend the Commission adopt a 10.25 percent ROE, an 8.48 percent cost of debt, and a 9.64 percent ROR.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

[10] ROE calculated as the return on the average of the beginning of the year and end of year equity, as reported by the Company in its annual report to the Commission.

Arizona Water Company
Capital Structures of Sample Electric Companies
Fiscal Year 2000

Line No.	[A] Company	[B] Ticker Symbol	[C] Long-Term Debt	[D] Short-Term Debt	[E] Preferred Stock	[F] Common Equity	[G] Total
1	Ameren	AEE	43.02%	3.19%	3.69%	50.10%	100.0%
2	American Electric Power	AEP	43.01%	19.41%	1.50%	36.08%	100.0%
3	Cleco Corporation	CNL	15.86%	8.55%	2.38%	73.22%	100.0%
4	Consolidated Edison	ED	47.54%	2.24%	2.19%	48.04%	100.0%
5	DPL Inc.	DPL	54.55%	0.00%	17.77%	27.68%	100.0%
6	DQE, Inc.	DQE	56.61%	0.11%	10.40%	32.88%	100.0%
7	DTE Energy	DTE	45.73%	3.35%	0.00%	50.92%	100.0%
8	Energy East	EAS	51.86%	9.26%	0.96%	37.93%	100.0%
9	FPL Group, Inc.	FPL	36.30%	10.57%	2.06%	51.06%	100.0%
10	IDACORP, Inc.	IDA	45.23%	6.31%	5.50%	42.96%	100.0%
11	NSTAR	NST	43.28%	14.07%	1.29%	41.36%	100.0%
12	Pinnacle West	PNW	44.23%	1.87%	0.00%	53.90%	100.0%
13	Potomac Electric	POM	36.02%	22.28%	1.75%	39.95%	100.0%
14	Puget Energy, Inc.	PSD	51.76%	9.02%	5.20%	34.02%	100.0%
15	UIL Holdings	UIL	46.96%	9.96%	0.00%	43.08%	100.0%
16	Average		44.13%	8.01%	3.65%	44.21%	100.0%
17	Arizona Water Company - Proposed		31.69%	0.00%	0.00%	68.31%	100.0%
18							
19							
20							
21							
22							
23							
24	Source: Form 10-K's filed with the U.S. Securities and Exchange Commission						

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Arizona Water Company
Capital Structures of Sample Water Companies
Fiscal Year 2000

Line No.	[A] Company	[B] Ticker Symbol	[C] Long-Term Debt	[D] Short-Term Debt	[E] Preferred Stock	[F] Common Equity	[G] Total
1	American States Water	AWR	47.93%	6.01%	0.56%	45.49%	100.0%
2	American Water Works	AWK	10.65%	2.34%	4.72%	82.29%	100.0%
3	California Water	CWT	44.63%	3.88%	0.99%	50.50%	100.0%
4	Philadelphia Suburban	PSC	46.71%	11.64%	0.20%	41.45%	100.0%
5	Average		37.48%	5.97%	1.62%	54.93%	100.0%
6	Arizona Water Company - Proposed		31.69%	0.00%	0.00%	68.31%	100.0%
7							
8							
9							
10							
11							
12	Source: Form 10-K's filed with the U.S. Securities and Exchange Commission						

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Arizona Water Company
Growth in Earnings and Dividends
Sample Water Companies

Line No.	[A] Company	[B] '96-'00 Earnings	[C] *Value Line* '98-'00 to '04-'06 Projected Earnings	[D] '96-'00 Dividends	[E] *Value Line* '98-'00 to '04-'06 Projected Dividends
1	American States Water	4.01%	6.00%	1.20%	1.50%
2	American Water Works	4.77%	9.00%	6.46%	4.50%
3	California Water	-4.53%	6.00%	1.41%	1.50%
4	Philadelphia Suburban	11.61%	6.50%	5.85%	4.50%
5	Maximum	11.61%	9.00%	6.46%	4.50%
6	Minimum	-4.53%	6.00%	1.20%	1.50%
7	AVERAGE[1]	6.80%	6.88%	3.73%	3.00%
8					
9					
10					
11	[1]Excludes negative results				

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Page 1 of 2

Arizona Water Company
Growth in Earnings and Dividends
Sample Electric Companies

Line No.	[A] Company	[B] '96-'00 Earnings	[C] Value Line '98-'00 to '04-'06 Projected Earnings	[D] '96-'00 Dividends	[E] Value Line '98-'00 to '04-'06 Projected Dividends
1	Ameren	4.56%	0.00%	0.24%	0.00%
2	American Electric Power	-11.43%	0.00%	0.00%	0.00%
3	Cleco Corporation	6.35%	7.00%	2.52%	2.50%
4	Consolidated Edison	-0.10%	2.00%	1.13%	1.00%
5	DPL Inc.	6.71%	10.50%	1.89%	0.00%
6	DQE, Inc.	-6.00%	5.50%	5.65%	5.00%
7	DTE Energy	4.66%	5.50%	0.00%	0.50%
8	Energy East	14.07%	8.50%	6.61%	5.00%
9	FPL Group, Inc.	5.83%	4.50%	4.09%	3.50%
10	IDACORP, Inc.	10.14%	1.50%	0.00%	0.00%
11	NSTAR	4.32%	7.50%	1.87%	3.00%
12	Pinnacle West	7.80%	6.00%	8.54%	6.50%
13	Potomac Electric	-1.56%	7.00%	0.00%	-7.00%
14	Puget Energy, Inc.	6.90%	4.00%	0.00%	0.00%
15	UIL Holdings	7.50%	5.00%	0.00%	0.00%
16	Maximum	14.07%	10.50%	8.54%	6.50%
17	Minimum	-11.43%	0.00%	0.00%	-7.00%
18	AVERAGE[1]	7.17%	4.97%	2.17%	1.93%
19					
20					
21					

22 [1]Excludes negative results

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Arizona Water Company
Calculation of Sustainable Growth
Sample Water Companies

Line No.	[A] Company	[B] br '96-'00	[C] *Value Line* Projected br '04-'06	[D] Book Value (BV)	[E] Market Price (MP)	[F] v 1-[(BV)/(MP)]	[G] s	[H] vs	[I] br + vs Sustainable Growth '96-'00	[J] *Value Line* Projected br + vs '04-'06
1	American States Water	2.46%	4.65%	19.10	34.71	0.45	3.41%	1.53%	3.99%	6.19%
2	American Water Works	4.49%	6.68%	16.96	31.14	0.46	6.47%	2.95%	7.44%	9.63%
3	California Water	3.50%	6.00%	12.88	23.98	0.46	0.31%	0.14%	3.64%	6.14%
4	Philadelphia Suburban	3.92%	6.30%	8.17	25.60	0.68	8.81%	6.00%	9.92%	12.30%
5	Maximum								9.92%	12.30%
6	Minimum								3.64%	6.14%
7	Average[1]	3.59%				51.22%	4.75%	2.66%	6.25%	8.56%
8										
9										
10										
11										
12										
13										
14										

15 Book value = average number of shares outstanding divided by common equity as reported 1st Qtr 2001 10-Q's filed with the SEC.
16 Market Price = Market price after the close of the market as reported by *Yahoo Finance*, May 22, 2001

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Arizona Water Company
Calculation of Sustainable Growth
Sample Electric Companies

Line No.	[A] Company	[B] br '96-'00	[C] *Value Line* Projected br '04-'06	[D] Book Value (BV)	[E] Market Price (MP)	[F] v 1-[(BV)/(MP)]	[G] s	[H] vs	[I] br + vs Sustainable Growth '96-'00	[J] *Value Line* Projected br '04-'06
1	Ameren	1.38%	4.29%	23.02	39.29	0.41	0.00%	0.00%	1.38%	4.29%
2	American Electric Pov	1.49%	7.83%	25.02	44.70	0.44	1.40%	0.62%	2.11%	8.45%
3	Cleco Corporation	4.31%	6.94%	10.36	22.89	0.55	0.05%	0.03%	4.34%	6.97%
4	Consolidated Edison	3.39%	3.73%	26.02	39.78	0.35	0.00%	0.00%	3.39%	3.73%
5	DPL Inc.	4.55%	12.76%	7.17	24.30	0.70	0.53%	0.37%	4.92%	13.14%
6	DQE, Inc.	4.30%	7.55%	13.61	21.10	0.35	0.00%	0.00%	4.30%	7.55%
7	DTE Energy	3.88%	6.40%	27.08	42.75	0.37	0.00%	0.00%	3.88%	6.40%
8	Energy East	6.27%	8.81%	15.52	21.99	0.29	0.00%	0.00%	6.27%	8.81%
9	FPL Group, Inc.	6.12%	7.71%	33.28	55.14	0.40	0.00%	0.00%	6.12%	7.71%
10	IDACORP, Inc.	3.45%	4.29%	22.15	36.47	0.39	0.00%	0.00%	3.45%	4.29%
11	NSTAR	3.68%	5.90%	22.91	42.67	0.46	1.39%	0.65%	4.32%	6.55%
12	Pinnacle West	6.50%	6.28%	28.87	42.51	0.32	0.00%	0.00%	6.50%	6.28%
13	Potomac Electric	0.63%	8.04%	18.83	21.76	0.13	0.04%	0.01%	0.64%	8.04%
14	Puget Energy, Inc.	-0.15%	3.43%	20.63	23.95	0.14	0.01%	0.00%	-0.15%	3.43%
15	UIL Holdings	1.82%	4.19%	33.99	48.63	0.30	0.27%	0.08%	1.90%	4.27%
16	Maximum								6.50%	13.14%
17	Minimum								-0.15%	3.43%
18	Average[1]	3.70%							3.82%	6.66%
19										
20										
21										
22										
23										
24										

25 [1]Excludes negative results

26 Book value = average number of shares outstanding divided by common equity as reported 1st Qtr 2001 10-Q's filed with the SEC.

27 Market Price = Market price after the close of the market as reported by *Yahoo Finance*, May 22, 2001

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Arizona Water Company
Selected Financial Data of Sample Water Companies

Line No.	[A] Company	[B] Ticker Symbol	[C] Current Mkt Price	[D] Book Value	[E] Mkt To Book	[F] *Value Line* Beta	[G] 99 Deprec. Rate	[H] 99 Tax Rate
1	American States Water	AWR	34.71	19.10	1.82	0.65	2.5%	46.0%
2	American Water Works	AWK	31.14	16.96	1.84	0.55	3.0%	39.5%
3	California Water	CWT	23.98	12.88	1.86	0.65	2.6%	37.9%
4	Philadelphia Suburban	PSC	25.60	8.17	3.13	0.60	na	38.4%
5	Maximum				3.13	0.65	3.0%	46.0%
6	Minimum				1.82	0.55	2.5%	46.0%
7	Mean				2.16	0.61	2.7%	46.0%
8								
9								
10								
11								
12								
13								
14								
15								

16 Current price = Market price after the close of the market as reported by *Yahoo Finance*, May 22, 2001
17 Book value = average number of shares outstanding divided by common equity as reported 1st Qtr 2001 10-Q's filed with
18 Depreciation Rate and tax rate according to 10-K's filed with the SEC
19 na: not available

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Page 1 of 2

Arizona Water Company
Selected Financial Data of Sample Electric Companies

Line No.	[A] Company	[B] Symbol	[C] Current Mkt Price	[D] Book Value	[E] Mkt To Book	[F] Value Line Beta
1	Ameren	AEE	39.29	23.02	1.71	0.55
2	American Electric Power	AEP	44.70	25.02	1.79	0.55
3	Cleco Corporation	CNL	22.89	10.36	2.21	0.55
4	Consolidated Edison	ED	39.78	26.02	1.53	0.55
5	DPL Inc.	DPL	24.30	7.17	3.39	0.60
6	DQE, Inc.	DQE	21.10	13.61	1.55	0.50
7	DTE Energy	DTE	42.75	27.08	1.58	0.60
8	Energy East	EAS	21.99	15.52	1.42	0.60
9	FPL Group, Inc.	FPL	55.14	33.28	1.66	0.45
10	IDACORP, Inc.	IDA	36.47	22.15	1.65	0.55
11	NSTAR	NST	42.67	22.91	1.86	0.55
12	Pinnacle West	PNW	42.51	28.87	1.47	0.45
13	Potomac Electric	POM	21.76	18.83	1.16	0.50
14	Puget Energy, Inc.	PSD	23.95	20.63	1.16	0.55
15	UIL Holdings	UIL	48.63	33.99	1.43	0.55
16	Maximum				3.39	0.60
17	Minimum				1.16	0.45
18	Mean				1.70	# 0.54
19						
20						
21						
22						
23						
24						
25	Current price = Market price after the close of the market as reported by *Yahoo Finance*, May 22, :					
26	Book value = average number of shares outstanding divided by common equity as reported 1st Qtr 20(					

Schedule JMR-S4
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Arizona Water Company
Calculation of s Value for Sample Water Companies

Line No.	[A] Company	[B] 2000	[C] 1999	[D] 1998	[E] 1997	[F] 1996	[G] 1995	[H] 1994	[I] s value
1	American States Water								
2	common equity		158,846	154,299	151,053	146,766	121,576	118,962	
3	funds from issuing common stock	2,805	-	-	1,472	21,494	-	-	
4	s value	1.77%	0.00%	0.00%	1.00%	17.68%	0.00%		3.41%
5	American Water Works								
6	common equity		1,634,798	1,481,611	1,142,416	1,057,874	818,939	733,440	
7	funds from issuing common stock	33,304	41,913	36,227	28,041	189,999	36,383	37,347	
8	s value	2.04%	2.83%	3.17%	2.65%	23.20%	4.96%		6.47%
9	California Water								
10	common equity		177,182	171,697	164,065	154,226	146,949	144,447	
11	funds from issuing common stock	644	46	-	-	1,434	707	17,741	
12	s value	0.36%	0.03%	0.00%	0.00%	0.98%	0.49%		0.31%
21	Philadelphia Suburban								
22	common equity		367,714	349,868	191,525	176,795	156,976	143,795	
23	funds from issuing common stock	37,190	7,061	32,589	14,258	14,651	9,060	6,916	
24	s value	10.11%	2.02%	17.02%	8.06%	9.33%	6.30%		8.81%
33									
34									
35									
36									
37	Source: Annual Reports to Shareholders and 10-K's filed with the SEC.								

Schedule JMR-S5
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Schedule JMR-S5
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Arizona Water Company
Calculation of s Value for Sample Electric Companies

Line No.	[A] Company	[B] 2000	[C] 1999	[D] 1998	[E] 1997	[F] 1996	[G] 1995	[H] 1994	[I] s value
1	Ameren								
2	common equity		3,089,700	3,056,120	3,018,968	2,354,801	2,319,197	69,054	
3	from issuing common stock	-	-	-	-	-	-		
4	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
5	American Electric Power								
6	common equity		5,006	4,842	4,677	4,545	4,340	4,230	
7	from issuing common stock	14	93	86	77	65	49		
8	s value	0.28%	1.92%	1.84%	1.69%	1.50%	1.16%		1.40%
9	Cleco Corporation								
10	common equity		406,829	424,691	408,751	393,394	377,163	363,027	
11	from issuing common stock	-	243	100	66	288	379		
12	s value	0.00%	0.06%	0.02%	0.02%	0.08%	0.10%		0.05%
13	Consolidated Edison								
14	common equity		5,412,007	6,025,605	5,930,079	5,727,568	5,522,734	5,312,997	
15	from issuing common stock	-	-	-	-	-	-		
16	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
17	DPL Inc.								
18	common equity		1,452	1,384	1,286	1,201	1,165	1,128	
19	from issuing common stock	-	-	20	20	-	-		
20	s value	0.00%	0.00%	1.53%	1.62%	0.00%	0.00%		0.53%
21	DQE, Inc.								
22	common equity		1,347,865	1,484,045	1,499,153	1,391,859	1,328,737	1,115,512	
23	from issuing common stock	-	-	-	-	-	-		
24	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
25	DTE Energy								
26	common equity		3,909	3,698	3,706	3,444	3,436	3,326	
27	from issuing common stock	-	-	-	-	-	-		
28	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
29	Energy East								
30	common equity		1,403,954	1,713,486	1,803,295	1,769,982	1,743,540	1,664,857	
31	from issuing common stock	-	-	-	-	-	-		
32	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
33	FPL Group, Inc.								
34	common equity		5,370	5,126	4,845	4,592	4,393	4,186	
35	from issuing common stock	-	-	-	-	-	-		
36	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
37	IDACORP, Inc.								
38	common equity		752,970	730,397	711,818	694,574	682,775	673,800	
39	from issuing common stock	-	-	-	-	-	-		
40	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
45	NSTAR								
46	common equity		1,523,532	1,039,891	1,073,454	1,036,424	989,438	915,747	
47	from issuing common stock	-	-	-	144	12,559	64,888		
48	s value	0.00%	0.00%	0.00%	0.01%	1.27%	7.09%		1.39%
49	Pinnacle West								
50	common equity		2,205,733	2,163,351	2,027,436	1,970,323	1,881,087	1,776,417	
51	from issuing common stock	-	-	-	-	-	-		
52	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
53	Potomac Electric								
54	common equity		1,910	1,877	1,863	1,889	1,871	1,955	
55	from issuing common stock	-	-	-	-	-	5		
56	s value	0.00%	0.00%	0.00%	0.00%	0.00%	0.23%		0.04%
57	Puget Energy, Inc.								
58	common equity		1,379,073	1,352,680	1,358,077	1,179,026	1,175,904	1,172,729	
59	from issuing common stock	-	1,136	-	65	-	-		
60	s value	0.00%	0.08%	0.00%	0.01%	0.00%	0.00%		0.01%
61	UIL Holdings								
62	common equity		458,298	445,507	438,963	440,016	439,981	428,028	
63	from issuing common stock	517	1,197	4,923	-	40	440		
64	s value	0.11%	0.27%	1.12%	0.00%	0.01%	0.10%		0.27%
65									
66									

67 Source: Annual Reports to Shareholders and 10-K's filed with the SEC.

Arizona Water Company
Results of Cost of Equity Analysis
Sample Water Companies

Line No.	[A] Discounted Cash Flow Method	[B]		[C] D_1/P_0		[D] g		[E] k
1	'96-'00 Growth in Dividends			3.50%	+	3.73%	=	7.23%
2	'96-'00 Growth in Earnings			3.60%	+	6.80%	=	10.40%
3	'96-'00 Sustainable Growth			3.59%	+	6.25%	=	9.83%
4								
5	Projected Dividend Growth			3.48%	+	3.00%	=	6.48%
6	Projected Earnings Growth			3.61%	+	6.88%	=	10.48%
7	Projected Sustainable Growth			3.66%	+	8.56%	=	12.23%
8								
9	CAPM Method	Rf	+	β	x	(Rp)	=	k
10	Historical Market Risk Premium	4.86%	+	0.61	x	8.20%	=	9.88%
11	Current Market Risk Premium - Low	4.86%	+	0.61	x	1.54%	=	5.80%
12	Current Market Risk Premium - High	4.86%	+	0.61	x	10.96%	=	11.57%
13								
14						Average of all DCF results	=	9.44%
15						Average of CAPM Results within DCF range	=	10.73%
16						Midpoint	=	10.08%

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Page 1 of 2

Arizona Water Company
Results of Cost of Equity Analysis
Sample Electric Companies

Line No.	[A] Discounted Cash Flow Method	[B]		[C] D_1/P_0		[D] g		[E] k
1	'96-'00 Growth in Dividends			5.76%	+	2.17%	=	7.92%
2	'96-'00 Growth in Earnings			6.04%	+	7.17%	=	13.20%
3	'96-'00 Sustainable Growth			5.85%	+	3.82%	=	9.67%
4								
5	Projected Dividends			5.74%	+	1.93%	=	7.67%
6	Projected Earnings			5.91%	+	4.97%	=	10.88%
7	Projected Sustainable			6.01%	+	6.66%	=	12.67%
8								
9	CAPM Method	Rf	+	β	x	(Rp)	=	k
10	Historical Market Risk Premium	4.86%	+	0.54	x	8.50%	=	9.45%
11	Current Market Risk Premium - Low	4.86%	+	0.54	x	3.94%	=	6.99%
12	Current Market Risk Premium - High	4.86%	+	0.54	x	14.19%	=	12.52%
13								
14						Average of all DCF results	=	10.34%
15						Average of CAPM Results within DCF range	=	10.99%
16						Midpoint	=	10.66%

Schedule JMR-S6
Page 2 of 2

Arizona Water Company
Staff Recommended Capital Structure
And Weighted Cost of Capital

December 31, 1999

[A]	[B]	[C]	[D]	[E]
	Amount	Weight (%)	Cost	Weighted Cost
Long-term Debt	$23,804,303	34.67%	8.48%	2.94%
Common Equity	$44,845,484	65.33%	10.25%	6.70%
	$68,649,787	100.00%		9.64%

Schedule JMR-S7

Schedule JMR-S8
Page 1 of 3

Analysis of Dr. Zepp's Study
Small Firm Equity Cost Differential: Case Study Based
on Comparison of DCF Equity Costs for Smaller and
Larger California Class A Water Utilities

	Larger California Class A's			Smaller California Class A's			
	Do/Po	Estimated Growth_d/	Equity Cost Estimate_e/	Do/Po	Estimated Growth_d/	Equity Cost Estimate_e/	Small Minus Large Water Utilities
1987	6.60%	9.29%	16.49%	5.38%	11.35%	17.34%	0.84%
1988	6.75%	6.58%	13.78%	5.81%	9.66%	16.03%	2.25%
1989	7.10%	6.33%	13.87%	6.47%	4.42%	11.18%	-2.69%
1990	7.24%	5.90%	13.56%	6.96%	7.07%	14.52%	0.95%
1991	6.94%	6.95%	14.37%	6.64%	5.78%	12.81%	-1.56%
1992	6.18%	5.25%	11.75%	6.50%	6.21%	13.12%	1.37%
1993	5.32%	6.29%	11.94%	5.49%	6.90%	12.77%	0.83%
1994	6.03%	4.22%	10.51%	5.80%	6.32%	12.49%	1.99%
1995	6.44%	3.72%	10.40%	6.44%	5.12%	11.89%	1.50%
1996	5.60%	3.37%	9.15%	5.77%	6.70%	12.86%	3.70%
1997	4.93%	3.67%	8.78%	4.52%	5.51%	10.28%	1.50%
						Mean (x)	0.97%
						Sdev. (s)	1.75%
						critical value @ .05 significance level	2.228
						T-statistic	1.83

Schedule JMR-S8
Page 2 of 3

Calculation of Test Statistic (t) and Hypthesis test

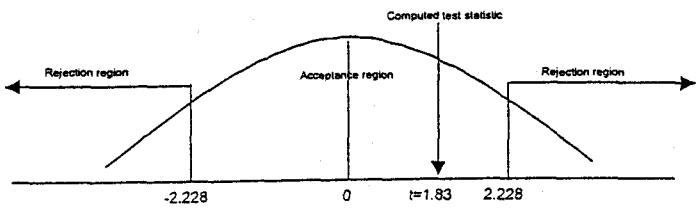
μ =population mean
Null hypothesis: H_0: $\mu = 0$
Alternative hypothesis: H_1: $\mu \neq 0$

sample mean (x):	0.0097
sample standard deviation (s):	0.0175
specified value to be tested (Δ):	0
critical value @ .05 significance level[1]:	2.228
sample size (n)	11

formula:

$$t = \frac{x - \Delta}{s \div \sqrt{n}}$$

$t = (.0097 - 0) \div (.0175 \div 3.3166)$
$t = .0097 \div .0053$
$t = 1.83$



Conclusion:
Because the computed test statistic (t) falls in the acceptance region (±2.228), we accept the null hypthesis and conclude with 95% certainty (1-.05=.95) that the difference between the cost of equity to small water companies and the cost of equity to large water companies (μ) cannot be said to be different from zero (0).

[1]From Schedule JMR-S8, page 3, based on 10 degrees of freedom and .05 significance level (two tailed test).

Schedule JMR-S8
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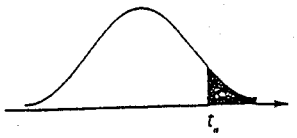
Critical Values of the t Distribution



Degrees of Freedom	$t_{.100}$	$t_{.050}$	$t_{.025}$	$t_{.010}$	$t_{.005}$
1	3.078	6.314	12.706	31.821	63.657
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.541	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.571	3.365	4.032
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
30	1.310	1.697	2.042	2.457	2.750
40	1.303	1.684	2.021	2.423	2.704
60	1.296	1.671	2.000	2.390	2.660
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

Source: M. Merrington, "Table of Percentage Points of the t-Distribution," *Biometrika* 32 (1941) p. 300. Reproduced by permission of the *Biometrika* trustees.

Exhibit JMR-S1
Page 1 of 3

26.1 WHAT WE DO KNOW: THE SIX MOST IMPORTANT IDEAS IN FINANCE

What would you say if you were asked to name the six most important ideas in finance? Here is our list.

Net Present Value (Chapter 3)

When you wish to know the value of a used car, you look at prices in the secondhand car market. Similarly, when you wish to know the value of a future cash flow, you look at prices quoted in the capital markets, where claims to future cash flows are traded (remember, those highly paid investment bankers are just secondhand cash-flow dealers). If you can buy cash flows for your shareholders at a cheaper price than they would have to pay in the capital market, you have increased the value of their investment.

This is the simple idea behind *net present value* (NPV). When we calculate a project's NPV, we are asking whether the project is worth more than it costs. We are estimating its value by calculating what its cash flows would be worth if a claim on them were offered separately to investors and traded in the capital markets.

This is why we calculate NPV by discounting future cash flows at the opportunity cost of capital—that is, at the expected rate of return offered by securities having the same degree of risk as the project. In well-functioning capital markets, all equivalent-risk assets are priced to offer the same expected return. By discounting at the opportunity cost of capital, we calculate the price at which investors in the project could expect to earn that rate of return.

Like most good ideas, the net present value rule is obvious when you think about it. But notice what an important idea it is. The NPV rule allows thousands of shareholders, who may have vastly different levels of wealth and attitudes toward risk, to participate in the same enterprise and to delegate its operation to a professional manager. They give the manager one simple instruction: "Maximize net present value."

Risk and Return (Chapters 9 and 10)

Some people say that modern finance is all about the capital asset pricing model. That's nonsense. If the capital asset pricing model had never been invented, our advice to financial managers would be essentially the same. The attraction of the model is that it gives us a manageable way of thinking about the required return on a risky investment.

Again, it is an attractively simple idea. There are two kinds of risks—those that you can diversify away and those that you can't. The only risks people care about are the ones that they can't get rid of—the nondiversifiable ones.

You can measure the *nondiversifiable*, or *market*, risk of an investment by the extent to which the value of the investment is affected by a change in the *aggregate* value of all the assets in the economy. This is called the *beta* of the investment. The required return on an asset increases in line with its beta.

Many people are worried by some of the rather strong assumptions behind the capital asset pricing model, or they are concerned about the difficulties of estimating a project's beta. They are right to be worried about these things. In 10 or 20 years' time we will probably have much better theories than we do now, but we

Exhibit JMR-S1
Page 2 of 3

would be prepared to bet that these more sophisticated theories will retain the two crucial ideas behind the capital asset pricing model:

- Investors don't like risk and require a higher return to compensate.
- The risk that matters is the risk that investors cannot get rid of.

Efficient Capital Markets (Chapter 12)

The third fundamental idea is that security prices accurately reflect available information and respond rapidly to new information as soon as it becomes available. This *efficient-market theory* comes in three flavors, corresponding to different definitions of "available information." The weak form (or random-walk theory) says that prices reflect all the information in past prices, the semistrong form says that prices reflect all publicly available information, and the strong form holds that prices reflect all acquirable information.

Don't misunderstand the efficient-market idea. It doesn't say that there are no taxes or costs; it doesn't say that there aren't some clever people and some stupid ones. It merely implies that competition in capital markets is very tough—there are no money machines, and security prices reflect the true underlying values of assets, based on the best information available to investors.

The Irrelevance Propositions (Chapters 15 and 16)

The irrelevance propositions of Modigliani and Miller (MM) imply that you can't increase value through financing policies unless these policies also increase the total cash flow available to investors. Financing decisions that simply repackage the same cash flows don't add value.

Financial managers often ask how much their company should borrow. MM's response is that as long as borrowing does not alter the *total* cash flow generated by the firm's assets, it does not affect firm value.

Miller and Modigliani used a similar argument to show that dividend policy does not affect value unless it affects the cash flow available to shareholders. A firm that pays you an increased dividend and gets the cash back by selling more shares is simply putting cash in one of your pockets and taking it out of another.

The same ideas can be run in reverse. Just as splitting up the cash flows doesn't add value, neither does combining different cash-flow streams. This implies that you can't increase value by putting two whole companies together unless you thereby increase total cash flow. Thus there are no benefits to mergers solely for diversification.

Option Theory (Chapter 24)

In everyday conversation we often use the word *option* as synonymous with *choice* or *alternative*; thus we speak of someone as *having a number of options*. In finance an option refers specifically to the opportunity to trade in the future on terms that are fixed today. Smart managers know that it is often worth paying today for the option to buy or sell an asset tomorrow.

We saw in Chapters 8 and 24 that companies are willing to pay extra for capital projects that give them future flexibility. Also, many securities provide the company or the investor with options. For example, a convertible bond gives the owner an option to exchange the bond for shares.

Exhibit JMR-S1
Page 3 of 3

Managers spend much more time thinking about options than they used to do. This is partly because they increasingly use options to help limit risk. Also, managers and economists are more aware that many assets contain a disguised option. For example, we pointed out that company debt provides an option to default.

If options are so prevalent, it is important to know how to value them. One of the great finance developments of recent years was the discovery by Black and Scholes of a formula to value options. We reviewed briefly the determinants of option value in Chapter 24.

Agency Theory

A modern corporation is a team effort involving a number of players, such as management, employees, shareholders, and bondholders. The members of this corporate team are bound together by a series of formal and informal contracts to ensure that they pull together.

For a long time economists assumed that all players acted for the common good. But in the last 20 years we have learned a lot about the possible conflicts of interest and how companies try to overcome such conflicts. These ideas are collectively known as *agency theory*.

Although we didn't allocate a separate chapter to agency theory, the theory has helped us to think about such questions as these:

- How can an entrepreneur persuade venture capital investors to join in his or her enterprise? (Chapter 14)
- What are the reasons for all the fine print in bond agreements? (Chapter 15)
- Are mergers, acquisitions, and LBOs simply attempts to "rip off" other players, or do they change management's incentives to maximize company value? (Chapter 22)

Are these six ideas exciting theories or plain common sense? Call them what you will, they are basic to the financial manager's job. If after reading this book you really understand these ideas and know how to apply them, you have learned a great deal.

26.2 WHAT WE DO NOT KNOW: SEVEN UNSOLVED PROBLEMS IN FINANCE

Since the unknown is never exhausted, the list of what we do not know about finance could go on forever. Here are seven unsolved problems that seem ripe for productive research.

How Are Major Financial Decisions Made?

In 1964 Arnold Sametz commented that "we know very little about how the great nonroutine financial decisions are made."[1] That is no less true today. We know quite a bit about asset values, but we do not know very much about the decisions

[1] A. W. Sametz, "Trends in the Volume and Composition of Equity Finance," *Journal of Finance* 19 (September 1964), pp. 450–469. See p. 469.

BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS	DOCKET NOS. W-01445A-00-0962

SURREBUTTAL TESTIMONY

OF

MARLIN SCOTT, JR.

UTILITIES ENGINEER

UTILITIES DIVISION

AUGUST 21, 2001

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Summary i

Introduction 1

Water Testing Costs and MAP Surcharge Mechanism 1

Water Pressure Tariff Language 2

SURREBUTTAL SUMMARY
FOR
ARIZONA WATER COMPANY
DOCKET NO. W-01445A-00-0962
(RATES)

I will appear on behalf of the Utilities Division Staff and will testify concerning Staff's position and recommendations regarding Arizona Water Company's rate application. My conclusions are:

1. Staff's annual water testing cost of $72,065 should still be adopted for the Northern Group.

2. The Company's MAP surcharge should still be eliminated for the Northern Group.

3. After further review, Staff's recommended water pressure tariff language should be withdrawn.

INTRODUCTION

Q. Please state your name for the record.

A. My name is Marlin Scott, Jr.

Q. Are you the same Marlin Scott, Jr. that filed direct testimony on June 26, 2001, in this proceeding?

A. Yes.

Q. What is the purpose of this surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to certain testimony submitted by Arizona Water Company ("AWC") concerning; 1) the water testing costs and the Monitoring Assistance Program ("MAP") surcharge mechanism, and 2) the water pressure tariff language.

WATER TESTING COSTS AND MAP SURCHARGE MECHANISM

Q. Have you reviewed AWC's testimony by William Garfield concerning the water testing costs?

A. Yes. Mr. Garfield stated that AWC would accept my estimated annual testing cost of $72,065 for this proceeding.

Q. Have you reviewed AWC's testimony by Mr. Garfield concerning the MAP surcharge mechanism?

A. Yes. Mr. Garfield disagreed with my recommendation that the MAP surcharge mechanism be eliminated for the Northern Group for the reasons that the MAP cost is variable and changes annually.

. . .

. . .

Q. What are your comments to Mr. Garfield's testimony regarding these two issues?

A. Although AWC accepted my annual testing cost amount of $72,065, which includes the 2001 MAP charges, AWC still wants to retain its MAP surcharge mechanism. Allowing the accepted annual cost of $72,065, plus retaining the MAP surcharge, would cause doubling of the MAP charges, since the $72,065 amount already includes the MAP charges. If AWC is allowed to retain this surcharge mechanism, my annual water testing cost of $72,065 would need to be reduced to $29,394, by removing the 2001 MAP charges totaling $42,671. The MAP surcharge mechanism could then be retained without a double counting.

Q. Would you consider a base annual testing cost of $29,394, plus the MAP surcharge mechanism, as another option?

A. Yes, this option could be considered. However, Staff believes the better option is to adopt Staff's estimated annual water testing cost of $72,065 because this estimated average cost includes and covers all the required testing costs. In addition, Staff's recommendation eliminates the necessity of annual filings and additional paperwork required with the MAP surcharge mechanism.

WATER PRESSURE TARIFF LANGUAGE

Q. Have you reviewed AWC's testimony by Michael J. Whitehead concerning the water pressure tariff language for fire protection?

A. Yes. Mr. Whitehead disagreed with my recommendation for the tariff language change and believes the existing tariff language should be retained for fire protection.

Q. Has your opinion changed regarding the water pressure tariff language for fire protection?

A. Yes. After reevaluating AWC's Tariff Schedule, TC-243, there are two different water pressure statements. One statement is on page 12, under PROVISION OF WATER

SERVICE, Item E, where it states, "Minimum Delivery Pressure – The Company will maintain a minimum standard delivery pressure of 20 psig at the customer's meter or point of delivery." The other statement is on page 19, where it states, "The Company does not guarantee a specific water pressure....." and where I recommended the language change to read, "The Company will maintain a minimum water pressure of 20 p.s.i.....". After further review, the stated water pressure languages for the PROVISION OF WATER SERVICE and FIRE PROTECTION sections are meant to be different. I would also agree with AWC that water pressure could drop below 20 p.s.i. whenever a fire hydrant is opened. For these reasons, I withdraw my recommendation to change the water pressure language specifically for fire protection.

Q. Does that conclude your surrebuttal testimony?

A. Yes, it does.